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LIGHT-COLORED RESUPINATE POLYPORES—III

WILLIAM A. MURRILL

The last number of this series, which appeared in MYCOLOGIA for November, 1920, dealt chiefly with white species. In the present article, I shall mainly discuss species that are rose-colored, lilac, red, or purple; or that show tints of these colors.

48. *Poria eupora* (P. Karst.) Cooke, Grevillea **14**: 110. 1886
Polyporus euporus P. Karst. Not. Sällsk. Faun. Fl. Fenn. **9**:
360. 1868.

Polyporus attenuatus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 61.
1873; Ann. Rep. N. Y. State Mus. **26**: 70. 1874.

Polyporus Blyttii Fries, Hymen. Eur. 571. 1874.

Poria Blyttii P. Karst. Bidr. Finl. Nat. Folk **37**: 83. 1882.

Poria attenuata Cooke, Grevillea **14**: 110. 1886.

Originally described as follows from specimens collected on dead willow wood in Finland by Karsten, who notes that it is not rare:

“Effusus, adhaerens vel adnatus, tenuis, submicans, ambitu
byssaceo-contextu albo; pori minuti, subangulati, demum saepius
laceri, curti, testaceo-lutei.”

The type of *P. Blyttii* is at Christiania. At Upsala I found two specimens under this name, one white and the other rosy-isabel-line, the latter being the correct one. According to Bresadola, *Polyporus collabens* Fries and *P. emollitus* Fries are forms of *P. Blyttii* Fries, and his statement appears to be supported by original specimens in his herbarium. Specimens from Karsten show that *P. euporus* is not distinct. It may be that the name here used will have to give way to *P. nitida* Pers. See discussion under that species.

The most complete description of this fungus is that recently

published by Overholts, the various original descriptions being brief and inadequate. He finds the spores $3-4 \times 2-3 \mu$ and the cystidia $60-80 \times 7.5-10 \mu$. Bresadola measured the spores as $4-4.5 \times 2-2.5 \mu$.

This species occurs on linden, poplar, oak, birch, beech, willow, etc., in Europe; and in this country on maple, oak, witch hazel, alder, willow, linden, ironwood, and certain other deciduous trees. I have found it very common on red maple. A specimen from Bresadola collected by Eichler on *Pinus sylvestris* exactly agrees with ours on maple in gross characters, and Bresadola finds the spores to be the same, but the cystidia less abundant. Peck's variety *subincarnata* occurs on hemlock, but this is a distinct species.

Ellis, N. Am. Fungi 921; Canada, *Faull* 47, 49, *Macoun* 36 (177), 41, 121, 133, 141, 145, 223, 397, 458, 499; Newfoundland, *Waghorne* 691; Maine, *Murrill* 1747, 2010, 2167; Vermont, *Burt*; New Hampshire, *Underwood*; Connecticut, *Underwood* 550; New York, *Cook*, 93, *Murrill* 64, *Underwood*, *Van Hook* (*Cornell University* 7896), *Van Hook & Smith* (*Cornell University* 8067); Pennsylvania, *Everhart & Haines*, *Herbst*, *Sumstine* 63; Ohio, *James* 10, *Lloyd* 379, 2788, 2789, 3116, *Morgan* 77, 81; Indiana, *Underwood*; Iowa, *Holway* 208; Florida, *Calkins*.

49. PORIA VINCTA (Berk.) Cooke, Grevillea 14: 110. 1886

Polyporus vinctus Berk. Ann. Mag. Nat. Hist. II. 9: 196. 1852.

Polyporus carneopallens Berk. Hook. Jour. Bot. 8: 235. 1856.

?*Polyporus Fendleri* Berk. & Curt. Jour. Linn. Soc. 10: 317. 1868.

Polyporus epilinteus Berk. & Br. Jour. Linn. Soc. 14: 55. 1875.

Described as follows from specimens collected by Sallé in Santo Domingo and still preserved at Kew:

"Totus resupinatus, centro crassiusculus margine tenuis subliberatus supra sanguineo-tinctus; poris, minimis pallidis contextu lignicolori. Sallé, no. 34. On dead wood.

"Spreading for many inches over the decayed wood, 2 lines or more thick in the centre, very thin at the extreme margin, where the upper surface is separable, smooth, and stained with blood-color. Pores scarcely visible to the naked eye, pallid, a line or more long; dissepiments thin; substance wood-color."

P. carneopallens was described from Spruce's collections in Brazil, *P. Fendleri* from Fendler's collections in Venezuela, and *P. epilinteus* from Ceylon. According to Cooke, one of the original type specimens of the last species has orange mycelium while the two others are without it. *Poria cassicola* Bres., recently described from Brazil, is nearly related. *Poria lilacina* Speg., collected by Balansa in Paraguay, is apparently not distinct.

This species is rosy-isabelline when fresh, like *P. eupora*, with which it is easily confused. It occurs throughout tropical regions on dead wood of orange, acacia, etc., as indicated in the following collections:

Mexico, Murrill 238, 622, 869, 976, 979, 1029, 1045, 1187, 1190; Mexico or Nicaragua, Smith 244; Nicaragua, Smith 65a; Cuba, Earle & Murrill 80, 210, 325, Horne 197, Underwood & Earle 1208; Porto Rico, Johnston 430, Johnston & Stevenson 1495, Stevenson 2888, 2910, 3362; Danish West Indies, Raunkiaer 138, 171, 188, 239, 249, 264; Jamaica, Underwood 3287, Murrill & Harris 942, Murrill 37, 184, 228, 247, 249, 373, Earle 100, 219; Venezuela, Fendler; South America, Gaillard 65; Ceylon; also from New Zealand and Perak.

50. *Poria albirosea* sp. nov.

Effused for several centimeters, continuous, inseparable; margin appressed, membranous, white to rosy-isabelline, becoming inconspicuous with age; context pallid, a mere membrane; hymenium slightly uneven, not glistening, pallid to rosy-isabelline, becoming pale-chestnut-colored in spots when bruised or handled; tubes rigid, rather regular, angular, 3-4 to a mm., reaching 2 mm. in length, edges rather thin, entire; spores ovoid, smooth, hyaline, $5 \times 3 \mu$.

Type collected on well-rotted deciduous wood at Fern Hollow, Pennsylvania, July 13, 1906, David R. Sumstine 70. Also collected at three different times on dead wood in Canada by Macoun (probably near Ottawa), and at Wilmington, Delaware, Commons 2672. Langlois' No. 2543, from St. Martinsville, Louisiana, may belong here, but the tubes seem rather small.

51. *Poria subundata* sp. nov.

Effused for several centimeters, becoming continuous, closely appressed, inseparable, thin; margin inconspicuous, thin, appressed, white, soon disappearing; context pallid, not apparent in age; hymenium very oblique, beautifully undulated, not glistening, cremeous to pale-rosy-isabelline; tubes small, rigid, regular in size and shape, angular, 5 to a mm., 1 mm. or less long, edges thin, entire; spore characters not satisfactorily determined.

Type collected on a decayed standing stub of a hardwood tree in wet woods on Cooper's Ranch at the base of El Yunque Mountain, Baracoa, Cuba, March, 1903, *L. M. Underwood & F. S. Earle 1168*. Also collected on decayed hardwood in Troy and Tyre, Jamaica, January, 1909, *W. A. Murrill & W. Harris 1012*.

52. *Poria subincarnata* (Peck) sp. nov.

Poria attenuata subincarnata Peck, Ann. Rep. N. Y. State Mus. 48: 118. 1897.

Briefly described by Peck as follows, from specimens collected on fallen branches of *Tsuga canadensis* at Alcove, New York, by C. L. Shear in November, 1893:

"This differs from the typical form in the paler color of the pores. It grows on hemlock bark and forms small patches rarely more than 1 inch in diameter."

Overholts has described it at length after studying type material and specimens recently collected by himself in New Hampshire. He finds the spores allantoid, hyaline, $4-5 \times 1 \mu$; cystidia none. I have a number of collections—on fir, hemlock, *Cupressus thyoides*, alder, maple, etc.—all of which appear to be identical with the type at Albany. Various specimens collected by me in Maine and New York appeared milk-white to buff with an incarnate tint when fresh and are now pale-rosy-isabelline in the herbarium. Thin forms of *Poria cupora* from Karsten collected on willow greatly resemble this species at first glance, but under a hand lens they show darker and more rosy tints, while the microscope reveals their strikingly different spore characters.

Ellis & Everhart, Fungi Columb. 1; Canada, *Macoun 289, 570*; Newfoundland, *Waghorne 29*; Maine, *Murrill 1925, 1985, 1988*,

1989; New Hampshire, *Underwood*; New York, *Murrill* 2708, *Shear*; New Jersey, *Ellis*.

53. *Poria Dodgei* sp. nov.

Widely effused, continuous, inseparable, thick; margin conspicuous, but narrow in age, appressed, membranous, pale-rosy-isabelline; context membranous, rosy-fulvous; hymenium even, somewhat glistening, rosy-isabelline to rosy-fulvous; tubes rigid, quite regular, angular, rosy-fulvous within at maturity, 2-4 to a mm., reaching 5 mm. in length, edges thin, subentire; spores elongate, smooth, hyaline, $5.5 \times 2.5 \mu$.

Type collected on a decayed coniferous log at Krohns Lake, near Algoma, Wisconsin, by *B. O. Dodge*.

54. *PORIA INCARNATA* (Alb. & Schw.) Cooke, *Grevillea* 14: 112. 1886

Boletus incarnatus Alb. & Schw. *Consp. Fung.* 250. 1805.

Polyporus incarnatus Fries, *Syst. Myc.* 1: 379. 1821.

I have good specimens from Sweden and Trent, the latter collected by Bresadola on dead trunks of larch. Specimens from Florida sent to Ellis by Calkins and determined by Cooke as this species were compared by me with material at Upsala and found to be distinct. Underwood, while at Kew, studied plants from South Carolina in this connection and said that they seemed the same as specimens from Sweden. *Poria Dodgei* is nearly related.

55. *PORIA UNDATA* (Pers.) Bres. *Ann. Myc.* 1: 78. 1903

Polyporus undatus Pers. *Myc. Eur.* 2: 90. pl. 16, f. 3. 1825.

Polyporus cinctus Berk. *Outl. Brit. Fungol.* 250. 1860.

Polyporus subliberatus Berk. & Curt. *Jour. Linn. Soc.* 10: 318. 1868.

Polyporus Broomei Rab. *Fungi Eur.* 2004. 1876.

Polyporus odor Peck, *Ann. Rep. N. Y. State Mus.* 38: 92.

1885. Not *P. odor* Sommerf. *Suppl. Fl. Lapp.* 275. 1826; Fries, *Elench. Fung.* 1: 90. 1828.

Poria nigrescens Bres. *Atti Accad. Roverto* III. 3: 83. 1897.

This species, so common in America, is usually labeled "*Poria*

callosa” or “*Poria corticola*,” from both of which it is very distinct. Peck described it from specimens collected on spruce logs at Osceola, New York, and referred to its strong, disagreeable odor; but his name does not appear to have been known or used outside of the state herbarium.

The earliest tenable name applied to it seems to be that of Persoon, who described it from a specimen collected by Chaillet on dead wood. His colored figure shows the “waves” in the hymenium which suggested the name. Bresadola seemed to think in 1903 that Fries misapplied the name *Polyporus vitreus* Pers. to this species, and his opinion is supported by a specimen from Karsten collected on *Pinus sylvestris*. Another note I have from him, however, is to the effect that *Poria vitrea* Pers. is not specifically distinct from *P. undata*, but that the former is smooth and the latter an undulate variety. I see no difference between types of *Poria nigrescens* Bres. and specimens collected by Overholts at Oxford, Ohio. This blackening is not common and seems to be associated with thick, old forms which have “revived” the second or third year.

Fresh specimens are described as “pure-white,” “yellow,” “reddish-flesh-colored,” etc., and as separating readily from the matrix. With specimens collected by Overholts on beech logs in Ohio are the following notes:

“Effused, separable, orbicular at first, then irregular, perennial, 2–3 mm. thick; margin thin, free, sterile, narrow, cottony, white; context inconspicuous; hymenium plane, gray, yellowish in weathered specimens; tubes stratified, pallid within, 2 mm. long each season; mouths circular, small, 6–7 to a mm., edges thin, entire; spores globose, smooth, hyaline, 3μ in diameter.”

Few species have such a wide distribution and find themselves at home on so many widely different hosts. Elm, beech, alder, orange, white oak, shingle oak, hemlock, spruce, fir, pine, Douglas spruce, and other trees are found mentioned as furnishing substrata for it; while the following list of specimens will indicate its distribution:

Barth. Fungi Columb. 5042; Rab. Fungi Eur. 2004; Zopf & Syd. Myc. Mar. 5; England, *Plowright*; Finland, *Karsten*; Ber-

lin, *Braun, Hennings, Magnus, Sydow*; Hungary, *Kmet*; Canada, *Dearness 699B, 1113, 2046, Macoun 107*; New Hampshire, *Wilson*; New York, *Ames, Atkinson 22767, Ballou, Underwood, Van Hook (Cornell University 8255)*; New Jersey, *Ellis*; Pennsylvania, *Banker, Sumstine 1, 6, 16, 17, 19, 55, 56*; Delaware, *Commons 2673*; Ohio, *Gentry, Hard (Cornell University 19618), Lloyd 1728, Overholts 23, 70*; Indiana, *Underwood, Van Hook 2192*; Missouri, *Demetrio 629*; Arkansas, *Long 19834*; California, *Harper, Johnston 253, 255*; North Carolina, *Townsend (Cornell University 5734)*; Alabama, *Earle and Underwood*; Mississippi, *Bartholomew 5782*; Louisiana, *Langlois 48, 183, 1735, 2431*; Florida, *Calkins 853*; Cuba, *Earle 751, Horne 197, Underwood & Earle 745A*; Danish West Indies, *Raunkiaer 172*; Panama Canal Zone, *Bethel*.

56. *PORIA BORBONICA* Pat. Jour. de Bot. 4: 198. 1890

Originally described as follows from specimens collected on bark on Reunion Island:

“Résupiné, dur, compact, entièrement gris de souris, marge nulle. Tubes obliques, longs de 5 millimètres, implantés directement sur le support; pores petits, arrondis, ou ovales allongés, entiers, à cloisons minces. Mycélium blanc, floconneux, abondant, entourant la plante d’une large bordure soyeuse.

“Plante formant des plaques denses, larges de 10–20 centimètres. Le mycélium pénètre profondément dans l’écorce et donne naissance à des couches blanches à la manière du *Poria corticola*.”

This species is widely distributed and quite common in tropical regions on dead trunks of mango, cocoanut, etc. When young and fresh, the hymenium is very light russet with a glaucous bloom. The following specimens have been examined:

Cuba, *Baker 3885, Earle 265, 653, Earle & Murrill 338, 484, 492*; Porto Rico, *Britton, Brown & Cowell 5360, Johnston 678, Johnston & Stevenson 1502, 1606, Santingo 33*; Jamaica, *Earle 226, 547, 556, Murrill 14, 61, 139, 1124, 1144, Underwood 3470*; Danish West Indies, *Raunkiaer 128, 133, 135, 176, 195*; Montserrat, West Indies, *Shafer 902*; Guadeloupe, *Duss 7*; Africa, *Dusen*.

Owing to the difficulty in finding spores, I can not say positively that the specimens listed below from Florida and adjacent states are the same as those given above. They are very similar, but without the glaucous bloom, which may have been removed by some treatment to destroy insects.

Ellis & Everhart, N. Am. Fungi 2304; Louisiana, *Langlois* 1274, 1736, 1879, 2544, 2545, 2552; Florida, *Calkins* 20, 635, 644, 704.

57. *PORIA LATERITIA* Pat. Bull. Soc. Myc. Fr. 15: 200. 1899

Described as follows from specimens collected by Duss on a dead trunk of *Symplocos martinicensis* in Guadeloupe:

"Larges plaques dures, ligneuses, planes ou à peine bosselées, grises à la surface, rouge brique à l'intérieur; pores superficiels (100 μ de profondeur), très petits (50–65 μ de diamètre), anguleux-sinueux, irréguliers, à cloisons minces, rigides, de 20–30 μ d'épaisseur, grises dans leur portion libre avec la tranche blanchâtre, souvent incomplètes et prenant alors l'aspect irpicoïde. Trame épaisse de 1 à 3 millim., brique, dure, traversée par les cloisons.

"Espèce distincte de *P. aurantiotingens* par sa trame rouge brique et non brune ou noirâtre."

I have specimens from Duss (No 592) collected on *Symplocos* and also a fine collection made on Fergus Mountain, Montserrat, January 30, 1907, *J. A. Shafer* 886. The latter specimens show the cinereous hymenial surface and the brick-red, stratose interior so characteristic of the species, as well as a handsome, smooth, dark-brown border encircling the fungus.

58. *PORIA SANGUINOLENTA* (Alb. & Schw.) Cooke, Grevillea
14: 112. 1886

Boletus sanguinolentus Alb. & Schw. Consp. Fung. 257. 1805.
Polyporus sanguinolentus Fries, Syst. Myc 1: 383. 1821.

The only American specimen that appears to belong here is one collected on rotten wood at Ottawa, Canada, by Macoun, February 10, 1883. Ellis collected specimens on oak at Newfield, New Jersey, which resemble authentic material, but their identity

is in doubt. His N. A. F. 1306, on cedar, seems to me distinct, although it was milk-white when young and fresh. Specimens collected by me on spruce near Stockholm, Sweden, in 1910, and determined by Romell, as well as by comparison with specimens from Karsten, were described by me in the field as follows: "Margin milk-white, slightly ragged and cobwebby; hymenium discolored at the center with brownish-chestnut tints as though bruised or stained with blood. The discolorations are not brilliant, however, but look more like old blood stains."

Bresadola reports the species from Hungary on poplar, beech, and walnut. Specimens from Poland on pine are said by him to be much thinner and quite distinct in appearance, being very similar to *P. violacea*, with which he says this form is often confused. According to him, the spores are $6-8 \times 2-2.5 \mu$, and the hymenophore is at first white, then stained with red, drying incarnate, and becoming purple or violet-fuscous in the herbarium. His idea of the species is quite different from Romell's and Karsten's, and specimens so named from him appear very similar to *P. purpurea*.

Krieger, Fungi Sax. 421; Roum. Fungi Gall. 3113; Sweden, Murrill; Finland, Karsten; Belgium, Bommer & Rousseau; Saxony, Krieger; Canada, Macoun 130.

59. *Poria Bracei* sp. nov.

Widely effused over the soil or decayed organic matter, following the irregularities of the surface and reviving from year to year until it forms extensive mats a centimeter or more thick; margin very broad and conspicuous, membranous, persistent, pale-wine-colored to lilac or rose-colored; context conspicuous, becoming rose-bay with age; hymenium appearing in patches, but soon continuous and fairly even, roseous to darker, not glistening; tubes regular in size and shape, roseous to darker within, 1-2 mm. long each season, mouths circular, 4 to a mm., edges rather thick, entire; spores globose, hyaline, 4μ .

Type collected on the bottom of a barrel at Nassau, New Providence, Bahamas, in 1918, *L. J. K. Brace* 9594. Also collected on dead wood at Nassau, December 15, 1918, *Brace* 9764; on the ground at Nassau, in 1904, *Brace* 836½; and on the

ground at Rio Piedras, Porto Rico, February 22, 1914, *J. R. Johnston & J. A. Stevenson* 1427.

60. *PORIA VIOLACEA* (Fries) Cooke, *Grevillea* 14: 112. 1886

Polyporus violaceus Fries, *Obs. Myc.* 2: 263. 1818.

According to Bresadola, this very rare species is scarcely known by mycologists, even Fries himself confusing it with other species. The color, he says, is constant, dilute-violet; subiculum exceedingly thin; tubes 2 to a mm., very short, resembling those of *Merulius*; spores hyaline, $5 \times 2.5-3 \mu$. Specimens collected by him at Trent on *Abies* resemble very closely what I am calling *Poria purpurea*, but Bresadola says that the spores of the latter species measure $7-8 \times 2-2.5 \mu$ and are cylindric-curved. Specimens labeled *Poria violacea* by Ellis and others have a distinct subiculum and differ in other ways. See *Poria taxicola*.

61. *PORIA PURPUREA* (Hall.) Cooke, *Grevillea* 14: 112. 1886

Polyporus purpureus Fries, *Syst. Myc.* 1: 379. 1821.

Boletus lilacinus Schw. *Schr. Nat. Ges. Leipzig* 1: 74. 1822.

?*Polyporus oxydatus* Berk. & Curt. *Jour. Linn. Soc.* 10: 317. 1868.

This is No. 2274 in Haller's list of Switzerland plants, collected on beech logs. Specimens described by Schweinitz were collected in North Carolina. The distribution in America is indicated by the list of specimens below, many of which have been called *Poria micans* Ehrenb., a species not found in America, but, according to Bresadola, well represented by *P. albocarneo-gilvidus* Romell, collected on oak in Sweden and distributed by Romell. The American hosts of *P. purpurea* are red maple, magnolia, sycamore, live oak, and pine.

Canada, *Dearness* 1075, *Macoun* 141; New York, *Cook*; Pennsylvania, *Witte* 38; West Virginia, *Nuttall* 223; Ohio, *Lloyd* 2811, *Morgan* 90; Indiana, *Underwood*; Colorado, *Cockerell* 76; Kansas, *Bartholomew* 2060, *Kellerman & Swingle* 1381; Oregon, *Murrill* 926; California, *McClatchie* 1071, *Parish* 2975, *Parks* 1022.

In addition to the above, there are a few specimens which I can not definitely connect up with this species without having more stages. They appear to be young and are distinctly lilac in the dried state, with smaller tubes than those of typical *P. purpurea*, reminding one strongly of *Poria aurantio-canescens* P. Henn., found on poplar in Berlin.

Pennsylvania, *Murrill 1190*; Delaware, *Commons 2163*; Ohio, *Lloyd 3560*, *Morgan 325*.

62. *Poria subbadia* sp. nov.

Irregularly effused for several centimeters, becoming continuous, closely adhering, rather thin; margin thin, appressed, arachnoid, white to rosy-isabelline, inconspicuous with age; context white to rose-colored, at first a mere membrane on which the tubes appear in patches, scarcely apparent in mature specimens; hymenium very uneven, not glistening, testaceous to pale-bay in dried specimens; tubes irregular, angular, collapsing to some extent, 2-3 to a mm., 1 mm. long, edges thin, becoming lacerate-dentate; spores smooth, ellipsoid, distinctly roseous under the microscope, $5 \times 3 \mu$.

Type collected by *L. M. Underwood* on a dead trunk at Auburn, Alabama, in February, 1896. Also collected in Bermuda on dead fiddlewood, December, 1912, *Brown, Britton, & Seaver 1418*.

63. *Poria mutans tenuis* Peck, Ann. Rep. N. Y. State Mus.

43: 39. 1890

Collected by Peck on spruce at Sevey, New York, in July. Little can be added to what Peck and Overholts have published about this plant until more mature specimens have been found and studied. After a careful examination of type material, I must conclude with Overholts that the variety seems quite distinct from *P. mutans*, being much thinner, softer, and differently colored. It differs from *P. purpurea* in color and in having a distinct subiculum; and from *P. taxicola* in color and in the shape of its tubes, although having a similar, well-developed subiculum. Compare *Poria nitida* Pers.

64. *PORIA NITIDA* (Pers.) Cooke, Grevillea **14**: 110. 1886

Boletus nitidus Pers. Obs. Myc. **2**: 15. *pl.* 4, *f.* 1. 1799.

According to Bresadola, Persoon's original plant is quite distinct from Fries' interpretation of it. An excellent specimen collected on pine in Poland was recently sent me by Bresadola and I find it strikingly similar to *Poria mutans tenuis* Peck. The specimens so labeled in American herbaria are mostly confused with *P. eupora* and *P. vincta*. *Poria nitida crocea* Schw. at Paris from French Guiana is near *P. spissa*. In his paper on Poland fungi, Bresadola gives the following description of *P. nitida*:

"Subiculum ut plurimum manifestissimum, usque ad 6 mm crassum, aurantiacum, in magis evolutis basi album, in exsiccatis saepe roseum, ex hyphis crasse tunicatis, 3-6 μ crassis, conflatum; tubuli et pori carnosi, molles, colore primitus carneolo dein vitellino vel aurantio-incarnato, compressione vel tactu fusciscentes, mox collapsi; sporae hyalinae, oblongae, 5-6 x 2½-3 μ ."

In opposition to Bresadola's opinion, I have a note made in Persoon's herbarium at Leiden in 1906 to the effect that *Poria nitida* Pers. is near, if not the same as, *P. attenuata* Peck, and that Bresadola did not see Persoon's specimens. This would make the Friesian interpretation of the species more correct and our American specimens so labeled would not be far wrong. If I could see Pers. Obs. Myc. **2**: *pl.* 4, *f.* 1 (which is not in our library) and compare it with my plants, I believe I could settle this question. Persoon's description is of little use.

65. *PORIA PAVONINA* Bres. Hedwigia **35**: 282. 1896

Described as below from specimens collected at Blumenau, Brazil, by Dr. Möller. I have examined the types of this species in Bresadola's herbarium and there are good specimens in the Ellis Collection here. The color is very beautiful, varying from dark-lilac to pale-purple. The species is known only from Blumenau, Brazil, where it was collected three times by Möller. His no. 364, which is older than the other two collections, was incorrectly determined by Bresadola as *Poria favillacea*, a species described from New England.

"Late effusa, coriacea, adglutinata, vivide pavonina, expallens, margine obsoleto, subiculo, nullo; tubulis brevibus, 1 mm. longis; poris parvis, subangulatis; hyphis subhymenialibus, 2 μ .—Sporae non visae."

66. *PORIA TAXICOLA* (Pers.) Bres. Atti Accad. Rovereto III.
3: 80. 1897

Xylomyzon taxicola Pers. Myc. Eur. 2: 32. pl. 14, f. 4, 5. 1825.

Polyporus haematodes Rostk. in Sturm, Deuts. Fl. Pilze 4: 127.
pl. 62. 1838.

Merulius Ravenelii Berk. Grevillea 1: 69. 1872.

Polyporus sorbicola Fries, Hymen. Eur. 570. 1874.

Serpula rufa pinicola P. Karst. Hedwigia 35: 45. 1896.

This beautiful purple, white-bordered species was originally described and poorly figured by Persoon from specimens collected by Chaillet on the trunks of a conifer. Standing as it does on the border line between *Merulius* and *Poria*, it has received a number of names, both in this country and in Europe. Most of the herbarium specimens in the *Poria* sheets are called either *P. violacea* or *P. incarnata* by Fries, Karsten, Plowright, Ellis, and others. Burt includes it in *Merulius*,—as did Persoon,—and I have no desire to alter this arrangement. The hymenium is often strikingly merulioid when young. The spores are allantoid, hyaline, 3.5–4.5 \times 0.5–1.5 μ . It occurs on dead wood and bark of pine, spruce, fir, *Cupressus thyoides*, *Thuja occidentalis*, and other conifers. One specimen from Karsten is said to have been collected on a deciduous trunk.

Cooke, Fungi Brit. 409; Ellis & Everhart, Fungi Columb. 1; Ellis, N. Am. Fungi 1305; Rav. Fungi Car. 4: 9; de Thümen, Myc. Univ. 406; England, Eyre, Massee, Plowright; Finland, Karsten; Sweden, Murrill 611; New York, Earle 1653, Murrill 822; New Jersey, Ellis; Pennsylvania, Stevenson 463; Minnesota, Holway 234; South Carolina, Ravenel; Louisiana, Bethel.

67. *PORIA SUBRUFa* Ellis & Dearness, Proc. Can. Inst. 1: 89. 1897

The type collection was made by Dearness at Granton, Ontario, in November, 1896, on a rotten beech log. Unfortunately, none

of the material is in very good shape to compare with *Poria mutans* or other near relatives. The description is as follows:

"Resupinate, effused, mostly in small patches 2-4 cm. across, inseparable, soft, juicy, creamy-white when fresh, becoming reddish when dry; margin thin, membranaceous, narrow, almost wanting. Pores round to sub-angular, $\frac{1}{4}$ - $\frac{1}{2}$ cm. long, $\frac{1}{4}$ - $\frac{1}{2}$ mm. wide; dissepiments thin, margin acute but not lacerate. Spores elliptic-oblong, $4 \times 3 \mu$."

68. *PORIA SPISSA* (Schw.) Cooke, Grevillea **14**: 110. 1886

Polyporus spissus Schw. in Fries, Elench. Fung. **1**: 111. 1828.

Polyporus salmonicolor Berk. & Curt. Hook. Jour. Bot. **1**: 104.

1849. Grevillea **1**: 53. 1872.

Polyporus cruentatus Mont. Ann. Sci. Nat. **1**: 129. 1854.

?*Polyporus laetificus* Peck, Ann. Rep. N. Y. State Mus. **38**: 91. 1885.

Poria crocicipora Cooke, Grevillea **14**: 110. 1886.

Poria phlebiaeformis Berk.; Cooke, Grevillea **15**: 24. 1886.

Originally described from Schweinitz' collections in North Carolina on hard trunks. Redescribed from Ravenel's collections in South Carolina on burnt wood, the authors supposing that Schweinitz sent a different plant to Fries under the name *P. spissus*. The original Schweinitzian description, however, calls for a plant with spadiceous tubes and Fries refers in his notes to distinct black lines and to its resemblance to the true *P. obliquus*, whose tubes are similarly oblique and somewhat spadiceous. Moreover, specimens in Hooker's herbarium were marked *P. spissus* by Schweinitz and excellent types of the same kind still exist in the Schweinitz herbarium.

P. phlebiaeformis is hardly mature enough to show its true characters. *P. laetificus* is also probably a young stage, the type material being sterile and too poor for comparison. When young, *P. spissa* is white, then pale-salmon-tinted with a whitish border. Ellis describes it as continuous for 2-3 feet, with a thin, narrow, subtomentose margin, showing at first only a faint tinge of salmon color, which becomes deeper and changes more or less to a dull-red in drying, turning reddish when bruised, and having a

very strong odor in drying; pores nearly round or subangular, 2–3 mm. long, resting on a separable substratum or membrane, which is of a soft, carnose nature, not very tough and about 1 mm. thick. The hymenium is stratose.

The range of this species is remarkable, as will be seen by examining the list of collections below. Among its hosts are apple, linden, red maple, ash, *Alnus rhombifolia*, old hymenophores of *Hapalopilus gilvus*, pine, and *Pinus radiata*.

Ellis & Everhart, Fungi Columb. 208; Ellis & Everhart, N. Am. Fungi 1594; Rav. Fungi Car. 1: 18; Canada, *Dearness* 1114; New York, *Ballou*, *Burnham*, *Cook*, *Underwood*; New Jersey, *Ballou*, *Ellis*, *Martin* 102, *Southwick*; Pennsylvania, *Anderson*, *Miss Clarke* 1595, *Everhart & others* 279, *Haines* 58, *Sumstine* 33, 39; Delaware, *Commons* 2783; Ohio, *Fink* 17, *Lloyd* 1106, *Morgan* 327; Indiana, *Underwood*; Michigan, *Johnson* 631; Missouri, *Demetrio*; Oregon, *Carpenter* 43; California, *Gardner* 1095, *Johnston* 254; North Carolina, *Schweinitz*; South Carolina, *Ravenel*; Cuba, *Wright* 939; Guiana; Ecuador, *Lagerheim* 98.

69. *PORIA MUTANS* Peck, Ann. Rep. N. Y. State Mus. 43: 39.
1890

Polyporus mutans Peck, Ann. Rep. N. Y. State Mus. 41: 77.
1888.

Described as follows from specimens collected by Peck on chestnut wood at Selkirk, New York, in August:

“Resupinate, rather thick, tough, following the inequalities of the wood; pores minute, rotund, short, buff-yellow or cream color, becoming dingy red or dull incarnate where wounded, the subiculum fibrous, changing color like the pores, the whole plant assuming an incarnate hue when dried.”

There are also specimens at Albany collected at Croghan, Bolton, and Savannah, New York; and I have six specimens collected on chestnut elsewhere, three from Connecticut, one from New Jersey, one from Pennsylvania, and one from Canada. The other specimens listed below may also be from chestnut, but the host is not mentioned in any case.

This species is closely related to *Poria spissa* and may be easily confused with it in herbarium specimens. Mr. Overholts found the spores to be hyaline, $3.5-5 \times 2.5-3.5 \mu$; cystidia none. In recently collected young specimens, I found copious spores measuring $3-4 \times 3 \mu$. In a collection made a few years ago, the spores were ovoid, smooth, hyaline, $3.5 \times 2.5 \mu$, and one flask-shaped, pointed, yellowish cystidium was found measuring $25 \times 8 \mu$. *Poria saloisensis* P. Karst. seems closely related, but is probably nearer *P. spissa*.

Canada, *Dearness*; Connecticut, *Clinton*, *Earle* 484, *Graves*; New York, *Ballou*; New Jersey, *P. Wilson*; Pennsylvania, *Sumstine* 5, 6, 10, 12, 14, 34, 66; Virginia, *Murrill* 389.

70. *PORIA INCRASSATA* (Berk. & Curt.) Burt, Ann. Mo. Bot.

Gard. 4: 360. 1917

Merulius incrassatus Berk. & Curt. Hook. Lond. Jour. Bot. 1: 234. 1849; *Grevillea* 1: 70. 1872.

Merulius spissus Berk. *Grevillea* 1: 70. 1872.

Polyporus pineus Peck, Ann. Rep. N. Y. State Mus. 41: 78. 1888.

Poria pinea Sacc. Syll. Fung. 9: 194. 1891.

This very interesting species, which has been carefully studied both by Burt and Overholts, may be readily recognized by its large, dark spores. It somewhat resembles *P. taxicola* in gross characters, but belongs decidedly to *Poria* rather than to *Merulius*. Curtis collected his original specimens on a pine stump in South Carolina, and Peck obtained his on pine at Selkirk, New York. The margin is whitish or yellowish and the hymenium dingy-white, becoming purple to black with age. The spores are fuscous, $7.5-11 \times 4-7 \mu$, and there are no cystidia.

In addition to the original specimens already mentioned, which I have seen at Albany, Kew, and elsewhere, I find several specimens in the Ellis Collection that represent stages not shown in the types. One of these collections is assigned a manuscript name by Ellis and the following notes accompany it: "Margin narrow, erect, tomentose, white, the edges fringed with short, spine-like hairs or bristles; mouths of tubes white, dull-reddish within;

spores allantoid, hyaline, $10-12 \times 3.5 \mu$." This collection was made on dead limbs of *Pinus austriaca* at Newfield on Christmas day. Four other packets collected by Ellis on pine at Newfield bear as many different dates, and three are referred by him to *Poria violacea*.

The following specimens resemble those of the above species, but prove to be undeveloped resupinate forms of *Tyromyces Smallii* Murrill:

Auburn, Alabama, *Earle*, on pine bark; Newfield, New Jersey, *Ellis*, on old pine stump.

71. *PORIA SUBVIOACEA* Ellis & Ev. Am. Nat. 31: 339. 1897

Described from specimens collected by Ellis on decaying white oak limbs buried beneath decaying leaves at Newfield, New Jersey, in September and October, 1896. I find only one packet so labeled in the Ellis Collection and it is practically destroyed by insects. Its date is October 1, while the description was drawn from specimens (which I do not find) collected on the same host, October 17. Ellis says that the hymenium is more or less tinged with violet or lilac at first, changing mostly to dirty-white or yellowish-white on drying. I imagine that the affinities of the species are rather with some of the thin, white forms previously studied than with the present group.

72. *PORIA CARYAE* (Schw.) Cooke, Grevillea 14: 111. 1886

This species was treated in Mycologia for March, 1920. The specimens mentioned there as Ellis & Ev. N. Am. Fungi 2306, collected by Calkins in Florida, seem to be incorrectly determined and belong nearer to the *Poria vincta* group. Other good specimens found in the Ellis Herbarium are as follows:

Ohio, *Morgan* 229. This is probably a part of the same collection sent to Underwood in 1894, which has already been cited.

London, Canada, on beech, by *Dearness* 1343, December 6, 1889.

I have already referred to specimens collected by me on beech in northern Maine.

Kansas, *Cragin* 193.

73. *PORIA CAVERNULOSA* (Berk.) Cooke, Grevillea 14: 113. 1886

Polyporus cavernulosus Berk. Jour. Bot. & Kew. Misc. 8: 235. 1856.

Collected on dead branches at Panuré, Brazil, by Spruce and described as follows:

“Resupinate, orbicular, at length confluent, of a dirty fawn colour, darker in the centre, rigid; margin narrow, formed of matted down, but not byssoid; pores $\frac{1}{45}$ of an inch across, sub-hexagonal; edge rigid, sometimes elongated at the commissures, sometimes slightly waved.”

Original specimens seen at Kew are not distinct from resupinate forms of *Trametes versatilis* Berk., although a totally different plant was found under this name at Paris and in the Fungi Cubenses Wrightiani. *P. byssoides* Jungh. in the Persoon herbarium at Leiden also seemed to me the same as *T. versatilis*, while Romell says that *Poria Dusenii* P. Henn. belongs in the same category.

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